has started the construction of a road which is not yet finished, but which permits trucks to reach Deirik in all seasons. Farmers flowed into the region following the opening of the road and began populating it. The present Minister of National Economy, Munir Diab, and Mr. Amin Nazif, formerly Secretary General of the Ministry of agriculture, own lands in the region.

c. Volume of Seeds and Crops

The main dry farming crop in Jazirah is wheat with "black" barley a poor second. It is estimated that about 50-60,000 tons of wheat are planted every year and some five thousand tons of barley. The average yield of wheat is 6-7 times per unit planted which gives a yearly crop of some 350-400,000 tons, of this quantity, 85-100,000 tons are needed for local consumption and for seed. This leaves about 250-300,000 tons available for export in an average year. Calculating this quantity at the price of LS 170 in the field free of all expenses, it means a revenue of LS 51 million per year to Jazirah with seeds and provisions already accounted for or about LS 250 per capita.

d. Difficulties in the Way of Agricultural Development

Agriculture in Jazirah suffers from many obstacles and hindrances which the Government can remedy with some careful thought and planning. The difficulties connected with land ownership and tenure and with credit and transport will be discussed separately, but other obstacles will be mentioned here below:

1. There is no agricultural station in the important wheat growing centers of Jazirah to record the amount of rainfall and the mean temperatures to guide the farmers.

2. The Jazirah is subject in most years to a heat wave during the month of May which destroys 25-35% of the crop. The only remedy is to introduce strains of wheat which mature before the period of the heat wave. Although the problem and the remedy are known to the Government, no effort has yet been made either to import new

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flood waters and distribute them in summer. All these studies, and it is not known how detailed they are, are believed to be kept at the French Legation in Beirut.

Such projects cost a lot of money, and Syria may not be able to construct them for many years. A quicker and less expensive policy is to combine elements from the system of irrigation by pumps and the system of gravity irrigation. This is the policy followed in Egypt, to dig canals conveying water from the river to areas ten or more kilometers removed and ten to twenty meters higher than the water level. Such dirt canals can be dug cheaply by modern machinery, and the farmers will then be authorized to install pumps on the canals. Since the greatest cost of an irrigation project is the construction of the main canal above the ground level, the method recommended removes the need for the elevated canals and the farmer can install his pump directly on the land to be irrigated. In this way, the farmer is spared also the loss due to evaporation and absorption on the elevated canal.

This is the quickest method to expand irrigated agriculture along the Khabur, and it may also prove in the long run cheaper to the country and the farmer than the elaborate dams and derivation canals contemplated by the Government. Such a conclusion needs, of course, more detailed engineering studies and comparison of costs before it becomes final.

III. The Problem of Monoculture

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Wheat and barley are by far the main crops of the Jazirah and with the exception of the Khabur valley, they are practically the only crops. What the irrigated lands of Kubur el Bid and Qamishli produce in summer crops does not compare in quantity or in value with the wheat crop.

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For this reason, Jazirah suffers from all the defects of monoculture. When the wheat crop is good and the prices are high land values increase, the farmers are enabled to pay most of their debts and to raise their standard of living by building better residences, buying furniture, making more trips with their families to the interior cities of Syria and Lebanon, sending their children to schools in Aleppo and Beirut, and increasing their welfare in general. But

when the wheat crop fails, as it did last year, there is great hardship in all of the Jazirah. Debts remain largely unpaid, the value of land falls off sharply, and interest rates become unbearable

The failure of a crop in Jazirah brings more hardship than is the case in other Mohafazas because Jazirah, with all the money revenue which accrues to it in a good year, has not arrived yet at the stage where it can save a part of this income to use in bad years. All the money revenue is immediately reinvested in machinery and in expansion of the area planted with additonal sums borrowed from the banks or from Aleppo merchants.

The point is reached where further expansion has become difficult, and the situation will become more or less stabilized so that some of the income will be put aside for emergencies in the coming few years. But even when savings reach a high figure, the problem of monoculture is not solved.

Jazirah at present does not produce the necessary vegetables and fruit for its own consumption. It imports them from Aleppo, Homs and Damascus. That is why the cost of living in the town of the Jazirah is one of the highest in Syria. Aside from the price of meat and samneh, everything including room and house rents, is more expensive than in the other big towns of Syria. Even flour is sold to bakers by the town municipalities at the same price for which it is sold in Damascus.

In former times, however, Jazirah produced great amounts of fruit, vegetables and dairy products. Its lands are very well suited to raising cattle and beef, an employment more profitable than wheat growing. A diversification in the use of land will make for a more balanced and prosperous economy in Jazirah. But the Jazirah farmers are not to be blamed entirely for the kind of agriculture prevailing. Circumstances beyond their control, connected primarily with the problems of land ownership and tenure, have largely imposed this type of monoculture upon them. These problems will be discussed in the following section, but it can be said in passing that the farmer cannot be expected to invest money in buildings for cattle raising, or in digging wells to provide irrigation for vegetable growing, or in planting orchards on lands to which he has no title or whose title is subject to constant disputes over boundaries with the neighbors and lately by decree-law 96 with the State.

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the latter should be taught elementary principles of repair and maintenance. The courses for field operators and mechanics might well include some in-service training in repair shops. The cooperation of reputable dealers in organizing such courses should be enlisted. Finally, the mission proposes the establishment of a secondary agricultural school in Kamichliye to specialize in problems of agricultural engineering. Facilities for instruction in this subject should also be provided at the existing school in Aleppo. The mission envisages an expenditure of £S 2 million for such school facilities. The short-term courses could probably be made self-supporting. To initiate and help carry out this program, the mission suggests that the government obtain the services of one or two machinery experts through the FAO.

Cereals

Aside from the measures outlined above, programs to raise the yield of certain crops must be undertaken. For cereals the development of higher yielding and more disease-resistant strains is of paramount importance. Although many varieties of wheat and barley are grown in Syria, little is known about their comparative worth. A large number of the more promising foreign wheat and barley strains have recently been imported for testing, but the funds, staff and facilities for an adequate testing program are largely lacking. The mission accordingly recommends that the Ministry of Agriculture be enabled to carry out a program for testing, selecting and propagating high-yielding and disease-resistant seed.[12] Since the shortage of trained Syrians may continue for some time, it is likely that the program will have to be handled by a foreign staff (FAO; the French Technical Assistance Mission in Syria). The staff should include a director in charge of planning, three plant breeders and a plant pathologist. They should be assisted by a staff of about 30 Syrians who will largely have to be trained for this purpose. The mission estimates the cost of such a program at about £S 4.5 million over the next five or six years.

For wheat and barley the aim should be to develop good varieties which mature early and can therefore be harvested before the extreme heat. For rice, which will undoubtedly be cultivated in larger volume as the irrigated area expands, the aim should rather be to develop slow-

[12] See Annex C, p. 304, for year-by-year recommendations.

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maturing varieties to replace the praecox strains currently used. The high day and comparatively low night temperatures in Syria are more suitable to slow-maturing rice varieties. For maize it is especially important to test and select appropriate hybrid strains. In Syria maize yields are only about 1.3 tons per hectare, while in the United States hybrid maize yields about 4.4 tons. With the introduction of high-yielding hybrid strains, the production of maize should definitely be encouraged since it fits well into the crop rotation scheme, is rather heat resistant and can provide not only grain but also fodder and silage.

Once suitable seed strains have been selected by testing, arrangements should be made with farmers in various parts of Syria for the propagation of such strains under proper supervision. These farms could serve at the same time as demonstration centers. The seed thus propagated should be certified and made available for distribution through licensed dealers, cooperatives and Chambers of Agriculture.

Cotton[13]

The government already has a praiseworthy program for the improvement of cotton cultivation. The disastrous failure of the cotton harvest in 1951, caused by the rather reckless expansion of cotton acreage and an uncontrolled invasion of destructive insects, brought in its train a number of corrective measures. The government regulated cotton acreage by licensing, and specified the time of planting. Controls over the treatment and distribution of seed were established. Even dusting and spraying were prescribed in 1952. Variety tests have also been conducted, and as a result Coker Wilt, a high-yielding strain, is now predominantly cultivated in Syria. A Cotton Office, staffed largely with Egyptian experts, has been charged with the improvement of cotton production. This entire program should be further expanded as more Syrian technical personnel become available. The mission suggests, for instance, that a special station be established for cotton breeding and insect control. More attention should be paid to cultural practices. Yields can be raised by reducing the danger of pests through rigorous cleaning of cotton fields following the harvest and destruction of host plants; by closer planting to discourage excessive vegetative growth and to promote earlier maturity; and by applying fertilizers at appropriate times.

[13] See Annex C, p. 305.

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largely on the acidity of the soil, and the p.H.[3] of practically all Syrian soil is between seven and eight. Most of the phosphorus is blocked. Whereas nitrogen and phosphorus deficiencies can be observed in almost all Syrian crops in various stages, very little indication of potassium shortage has been noted.

Besides the three main elements, the tracer elements iron, manganese, zinc, boron, copper and molybdenum are quite significant. A shortage or lack of one or another can result in low yields, even in soils generally classified as very good. The application of tracer elements e.g., the application of zinc and copper to fiber plants, citrus fruits, etc., has shown remarkable yield increases in other parts of the world. Unfortunately, very few studies of soil fertility and plant growth conditions have been conducted in Syria. Those made by Bracken for winter and summer crops and by Ibrahim Boules for cotton have indicated a general shortage of nitrogen, a disputable lack of phosphorus and rather favorable conditions as regards potassium. The excellent studies and surveys conducted by an FAO soil expert during the last few years have not been sufficiently intensive or extensive so far to form the basis of definite conclusions. But the mission is convinced that a thorough soil survey on the lines already begun by these specialists will be of great assistance in increasing the agricultural area and production. The compilation of the information thus gained, together with data on climate and water resources will be of much value in ensuring a sound rational basis for agricultural planning and development. Aerial mapping is a necessary adjunct to ground surveys and the successful coordination of the undertaking will require the development of a cartographic office.

II CEREALS

Wheat and Barley

Syria is fortunate in being able normally to harvest its wheat and barley approximately one month earlier than American and European cereals; consequently they can be brought on to the European market at the time

[3] p.H. values indicate relative acidity or alkalinity. Values run from 0 to 14, 7 indicating neutrality, numbers less than 7 increasing acidity, and numbers greater than 7 increasing alkalinity.

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243 of greatest demand. Climatic conditions favor cultivation of hard and high protein-content wheats, much in demand for blending and for the macaroni industry. Both these factors can greatly influence Syria's wheat export potential.[4] Fostering development of early-maturing and high protein-content wheats should become a main objective of future research, particularly in view of the highly competitive world market in cereals and the rise in home demand created by the population increase.

The experimental and research work in selection and breeding is still in the early stages. Shortages of trained personnel (in 1953 there was only one specialized research agronomist) and lack of organized planning are responsible for the rather poor results thus far. Concentration on a more intensive plant breeding program during the next five years is urgently needed. The staffs of the division of plant breeding and of the experimental division of the Ministry of Agriculture should be increased and additional budget allocations provided. If the recommendations of the mission are carried out, there is no reason why cereals production should not increase by at least 40% by 1960.

Syrian wheat can be divided into two main varieties; soft (*Triticum sativum*) and hard (*Triticum durum*); reliable data on the proportions of each are not available. It is generally assumed that hard wheat varieties are most widespread but as there is no officially controlled seed distribution center, the varieties are often mixed.

The most prominent hard varieties are the Haurani and the imported Senator Capelli (Sicily) and Florence Aurore (Morocco). The Hamari is rather well adapted to various soil types and dry farming practice and is said to be resistant to climatic extremes and to fungus diseases. The Bayyadi variety is tender to semi-hard. Distribution of varieties is shown in Table 1.

In addition to these, the Department of Agriculture, aided by FAO, has introduced a great number of the most promising rust- and disease-resistant wheat varieties and over 60 barley varieties during the last three years. Their adaptability to Syrian climate and soil conditions is now being tested in the regional field stations.

The quantity planted rarely gives the optimum yield. Almost everywhere too much seed (mostly poor quality) is used; amounts vary from 40 kg. per hectare in the grey sub-desert and gravelly soils to over 200 kg. per hectare on irrigated lands. Use of better seeding techniques should result in a saving of at least 25% in the course of the next 10 years. In par-

[4] Wheat and barley exports were worth almost £S 71 million in 1953.

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ticular, wider spacing between rows not only affects yields but permits intercropping (e.g., rows of wheat interplanted with green manure and/or forage crops, and later with cash crops), which may lead to the reclamation of many devitalized soils. This implies a long-term program: row seeding and interplanting must be tried out on a selective basis under the guidance of the agricultural extension service.

The mission recommends introduction of a cleaning and grading system to improve the marketability of export wheat, with standardization in at least two types (hard and soft), each with a minimum protein specification.

TABLE 1 Percentage Distribution of Wheat Varieties in Various Districts, 1953

District	Hauranie	Hamarie	Bayyadib	Capellie	Florencee	Others	Observations
Damascus	40	—	—	40	—	20	Mostly under partial irrigation.
Homs	15	40	25	15	5	—	Partially irrigated.
Hama	5	55	25	15	—	—	Partially irrigated.
Hauran	95	—	—	5	—	—	Dry farming.
Euphrates	—	70	10	10	10	—	Mostly under full irrigation.
Jezireh	—	45	10	15	15	15	Only small areas under irrigation.
Aleppo	—	70	13	10	2	5	Dry farming.
Latakia	—	50	15	10	15	10	Dry farming.
Djebel Druze	—	95	—	5	—	—	Dry farming.

a Hard.
b Semi-hard.

SOURCE: Ministry of Agriculture.

The use of commercial fertilizers is also recommended, particularly in the Jezireh. Insecticides and fungicides should be tried out on a large scale and the influence of weedicides should be studied at demonstration farms.

Whereas many of the wheat varieties are indigenous, only one of the few barley varieties seems to have originated in Syria, the White Arabian or Syrian. Moderate to early maturing, it is rather adaptable to poor soil. It is used in the manufacture of bread and beer and is the only variety exported. The Black Arabian is preferred for its larger seed and earlier maturity and

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● 2N3 makes good animal fodder; it is too rough for human consumption. The Prieur, imported to the Damascus Field Station some 15 years ago, and rather well adapted to all soils, has become a high yielder; the hard seed must be ground before being used as animal feed.

Pests and diseases caused quite substantial losses. The most destructive of several sucking insects is the Wheat Shield bug (*Burygaster integriceps*) which is said to cause wheat and barley losses up to 30% in some areas. Planting of early maturing varieties is one of the best means of control, for the insect rarely attacks seed that has begun to harden. Considerable damage can be caused to stored grain by the grain weevil (*Calandra grenaria*). Wheat smuts and wheat rust are responsible for substantial losses, especially in regions with seasons of high temperature and excessive humidity, e.g., Latakia and certain parts of the Jezireh. Remedial measures should include the importation of rust-resistant varieties, the breeding of local resistant varieties and the planting of early maturing strains. Destruction from locust invasions, though still significant in many areas, has been greatly reduced by modern entomological and chemical science and by national and international anti-locust control measures. Windburn and lodging still cause considerable damage. The scale of these losses clearly calls for a careful selection and breeding program.

Recommended Cereals Seed Program

The mission suggests that a seed selection program be carried out as follows:

1st year: Continuation of the selecting and breeding program started some years ago in the experimental station. Comparative tests of foreign and local varieties and selection of those best adapted to each region. Promotion of early-maturing and high protein-content varieties, and selection of disease-resistant strains. Tests of intercropping, and trials of other improved cultural methods and their influence.

2nd year: Purification of superior varieties. Introduction of parental material for hybridization. Seed production. Experimental tests to determine optimum seed quantities for various soils under varying local conditions. Continuation of tests for intercropping.

3rd year: Comparative yield tests of the best local and foreign varieties. Tests of influence of cultural methods. Seed production of the most promis-

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ing types. Release to selected seed producers of promising types tested during at least three years.

4th year: Continuation of yield tests. Growing of F. generation hybrids. Retesting of seed released the previous year to seed growers. Seed rejuvenation of older material. Establishment of priority standards.

5th and following years: Comparative yield tests of the best varieties, including hybrids. Evaluation of hybrids.

A committee for seed production composed of representatives of the Ministry of Agriculture and accredited seed growers should be established to promote a certified seed program. The FAO should be invited to assist this committee. The committee would designate desirable varieties for the various regions, advise on seed imports and designate the standard for certified seed. The Ministry of Agriculture should set up an appropriate organization to certify and distribute seed to accredited traders on a non-profit, non-loss basis, and to grant premiums for the best seed grown. Proper supervision of seed farms through field inspectors will be necessary to safeguard against the admixture of impure or other seed both in the field and in the process of threshing and cleaning.

Following experimental seed testing, the stages would be:

1. Transfer of seed to the extension service for multiplication under its direct supervision and control. Some of the present experimental stations could serve as propagating centers.

2. Allocation of registered seeds among seed-growing districts and seed growers in accordance with their interest in particular strains.

3. Selection by field officers (extension agents) of experienced farmers whose land would serve as demonstration plots for the nucleus seed.

4. Drawing up of contracts by the Ministry of Agriculture with accredited seed growers to harvest the seed and return it at premium rates (establishment of certified seed growers). This seed, having been tested and labelled, would then become certified government stock seed.

III COTTON

The legislation relating to cotton production is adequate and marked a great step forward. The government should, however, enforce the prohibition against planting in areas where climatic conditions make such planting

PRODUCTION

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مساحات ومحاصيل أهم انواع الحبوب ، ١٩٥٠/١٩٥١ ـ ١٩٥٢/١٩٥٣

(المساحة بالهكتار والمحصول بالاطنان)

AREA AND PRODUCTION OF PRINCIPAL CEREALS, 1950/51 — 1952/53

(Area in hectare, produce in tons)

Table No. 1

جدول رقم ١

Cereals	١٩٥١/١٩٥٠ 1950/1951		١٩٥٢/١٩٥١ 1951/1952		١٩٥٣/١٩٥٢ 1952/1953		النوع
	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	
Wheat	1,036,693	509,642	1,167,150	900,000	1,314,422	* 870,000	القمح
Barley	343,556	154,701	396,621	468,924	428,010	472,457	الشعير
Lentils	65,744	30,231	66,216	50,597	70,909	62,814	العدس
Chick-peas	27,360	8,617	28,388	24,244	22,456	10,550	الحمص
Broad beans	20,252	25,518	15,693	12,080	16,928	11,105	الفول
Vetch	3,405	1,899	3,721	2,909	2,543	2,079	بيقية حب
Vetch, spring	15,460	5,860	15,882	11,632	13,333	12,203	كرسنة
Millet	71,418	24,171	114,921	106,114	96,456	123,692	ذرة بيضاء
Maize	16,041	21,824	19,246	22,556	18,115	22,430	ذرة صفراء
Rice	531	927	2,818	5,779	5,339	16,176	ارز
Sesame seed	5,893	3,628	27,776	21,210	22,253	9,657	سمسم
Beans	1,494	972	1,422	1,008	1,507	1,421	فاصوليا حب
Peas	197	159	222	270	223	196	بازيلا حب
Chickling vetch	57,325	26,674	58,306	45,291	59,055	58,628	جلبانة حب

Source : Ministry of Agriculture.

المصدر : وزارة الزراعة

* Figures of the Cereal Office.

* ارقام مكتب الحبوب

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
SYRIA MD1

cultivated area. Holdings of 25–250 acres are estimated to take up 33 per cent of the area and holdings over 250 acres 29 per cent. State land is estimated to represent 23 per cent of the total cultivated area. Decrees for the distribution of state lands were issued in 1952: their implementation, at the time of writing, is still under review. Legislation to prevent the subdivision of plots by succession inheritances is also under consideration; at present a four-acre plot may have thirty-seven owners, and its management is profitable only to lawyers.

The approximate acreage and crop and yield of the main products are shown in the following table.

MAIN CROPS

	Area (000 hectares)			*Production* (000 metric tons)			*Yield* (100 kg. per ha.)	
	1950	*1951*	*1952*	*1950*	*1951*	*1952*	*1950*	*1951*
Cotton (lint)	78	217	142	35	49	49	4·6	2·3
Wheat	992	1,037	900*	830	510	850*	8·4	4·9
Barley	416	344	400*	322	155	350*	7·7	4·5
Vegetables	68	66	..	47	40	142	..	..
Tobacco†	10	11	..	9	9	..	8·7	..
Rice (paddy)	7	..	..	24	6	6	19·3‡	..

.. = not available.

* The Banque de Syrie et du Liban (*Exercice 1952*) quotes the following figures for 1952 (in thousands):

Wheat: area = 1,180, production = 805.
Barley: area = 396, production = 467.

† Including Lebanon (annual production about 2,000–3,000 tons). ‡ 1949.

(Sources: FAO, *Yearbook of Food and Agricultural Statistics, 1952* and *Monthly Bulletins of Statistics*, 1953; vegetable figures from Banque de Syrie et du Liban, *Exercice 1952*, Paris, 1953.)

Wheat is the traditional staple crop of Syria and in a normal year a quarter of a million tons can be exported. But the poor harvest of 1951 necessitated wheat imports of about 50,000 tons. The 1952 wheat crop, however, once more increased to over 800,000 tons. Barley is also grown and exported and, though the acreage has diminished somewhat since 1949, the crop is adequate.

In 1950 fortunes were made from cotton which fetched a high price for the abundant harvest. The acreage sown to cotton trebled between 1949 and 1950 and again in 1951. But while in 1950 the cotton yield was high, the 1951 harvest proved disappointing because of drought and attacks of the boll weevil. Despite a fall in cotton acreage in 1952—due chiefly to the downward trend in cotton prices—that year's output was maintained at the 1951 level, thanks largely to better methods

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Chapter VI

SYRIA AND LEBANON

LAND AND POPULATION

At first sight, the main crop of Syria appears to be thistles, and so it is in fact: about half the land is under fallow every year, and the cultivated land is cropped only one year in two or even three. There are some districts with intensive cultivation, for instance, the oasis of Damascus, with its brilliant green crops irrigated by 'Abana and Pharphar'; but most of Syria is cultivated very extensively indeed.

In Syria and Lebanon together the area cultivated before the late war was some 5·8 million acres, but of this total only 3,900,000 acres were cropped each year, the remainder being fallow. The greater part of the cropped area was under cereals, about two-thirds being under wheat and one-third under barley.

In Lebanon, the whole of the cultivated area is cropped, and there is no uncultivated land which could be brought into cultivation. In Syria however there are large areas of cultivable land which are not at present cultivated, the total cultivable area being some 12½ million acres, of which only about one-third is under cultivation. Unfortunately this figure is only a rough estimate, and it is not clear how much of the area is cultivable under present conditions, or how much of it is marginal desert grazing. Some of it is undoubtedly cultivable under present conditions, and there is certainly no shortage of land in Syria.

SYRIA: AGRICULTURAL LAND, 1943[1]

Province	*Cultivable*	*Cultivated* (including fallow)
	Acres	*Acres*
Jezira	2,471,000	543,600
Euphrates	3,212,000	321,200
Aleppo	3,706,000	1,260,000
Homs	420,000	345,900
Hama	1,309,000	1,210,000
Damascus	1,062,000	345,900
Hauran	518,600	518,900
TOTAL	12,698,600	4,545,500

[1] Omitting the provinces of Latakia and Jebel ed Druz for which no figures are available; their cultivated area may be estimated at about half a million acres.

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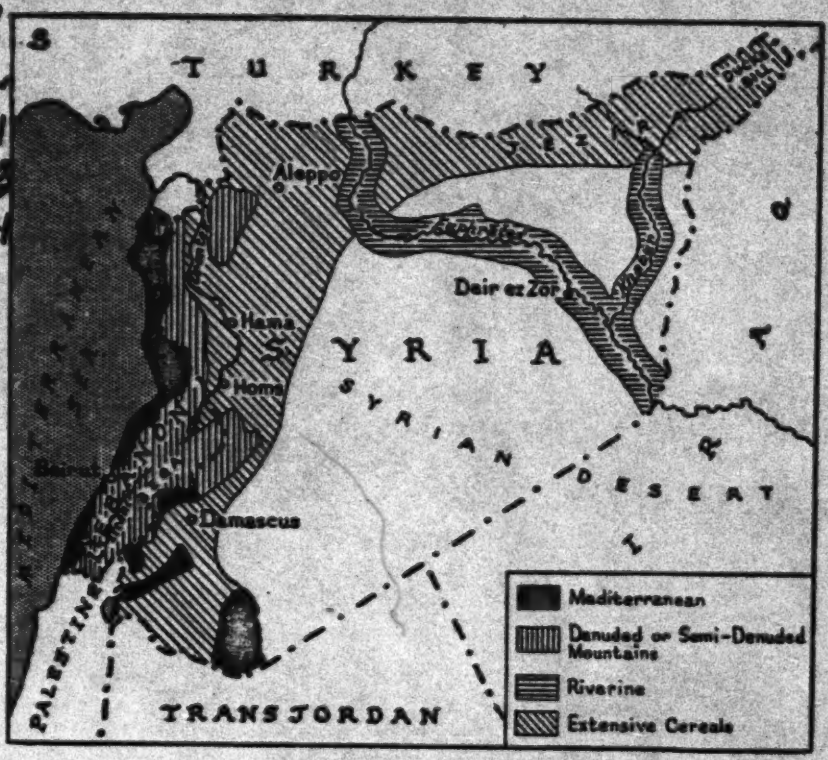

SYRIA AND LEBANON: AGRICULTURAL AREAS

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GRAIN PRODUCTION IN SYRIA AND LEBANON, 1934–43

	Tons	*Cwts per acre*
Wheat		
1934	443,000	6·3
1935	504,000	7·5
1936	427,000	6·3
1937	468,800	6·6
1938	644,300	9·0
1943	624,280	7·3
Barley		
1934	292,100	7·8
1935	347,100	9·5
1936	308,100	8·2
1937	266,300	6·5
1938	383,400	9·0
1943	330,485	8·2

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With a total rural population of about 2·8 million in 1943–4, the production of grain per head amounts to only 3·4 quintals or 6·4 hundredweights. Thus the problem for Syria is to in-

POSSIBILITIES OF DEVELOPMENT

scope both in the Jezira and in the Euphrates region there is for widening the area cultivated and raising the yields, as the soil is fertile. In the Jezira the use of machinery could be extended—it is already increasing fast. Better livestock production could be achieved by greater use of fodder crops for which conditions are favourable: in the 'Duck's Bill' good clover grows wild. At present fodder crops are not considered worth cultivating.

In the Euphrates region there is great scope for extension of irrigation. But a large scale scheme would be costly because the river runs between high escarpments, which vary in distance between each other up to about 10 miles. To irrigate much larger areas it would be necessary to lift water over the escarpments. There are large areas of uncultivated land, particularly between Abu Kemal and Deir-ez-Zor. Even on the land already cultivated yields of wheat could be much higher: at present the yield is four to six times the seeding rate, and, according to local farmers, could be raised to ten to fifteen times the seed with better irrigation. The high cost of fuel oil is the limiting factor as it also is for tractor work. On the Khabur river improvement of the ancient barrages would permit an extension of irrigation.

It is in this area that there is real scope for a planned settlement of cultivators, with improved methods and a better system of land tenure. The obvious form for such settlement to take would be on the model of the Jewish co-operative farms, small holdings with collective use of machinery and working to a cropping plan; on the uncultivated land such settlement could be undertaken without incurring high capital costs.

So far as the Euphrates Valley is concerned, similar co-operatives based on communal control of water supplies might be started on a small scale. Large-scale irrigation here would be costly, and would necessarily have to be co-ordinated with the irrigation of Iraq. An immediate step needed is to reduce the price of fuel oil.

While it is easy on paper to see the possibilities of such schemes as these, it is not easy to see where in fact the motive power for them is to come from. They will not bring in quick big returns, which are what local farmers and landowners want: the district is remote and the main object of such investment would be a long period rise in the standard of living, in which the moneyed classes are not interested. Present-day Syria is not

241 with 1,032 in 1952; and 547 tractor planters, compared with 471. 1/ There were also, in 1952, 381 combines, 133 threshers and 108 harvesters. 2/

243 As table 50 shows, most of the increase in acreage was in cereals. Wheat and
242 barley yields continued to fluctuate violently, according to the amount of rainfall and weather conditions, but have showed no marked trend and, save in exceptional years such as 1949, have been well below a ton per hectare. Apart from mechanization, little has been done to improve methods of cultivation, apply fertilizers or use improved seed except in El Jezira, where high-yielding improved
433 seeds and fertilizers are sometimes used. Hence, in the post-war period, output
241 of grains has increased in the same proportion as acreage, or only slightly more. The expansion in cotton acreage, though smaller in absolute terms, was proportionately much greater; 3/ the acreage rose to 25,000 hectares in 1949 and 78,000 in 1950; the high prices prevailing in that year and the great profits made by cotton planters sent acreage up to 217,000 hectares, partly at the expense of wheat cultivation. The sharp decline in yields in 1951 and the steep fall in price in 1951 and 1952 caused heavy losses and led to a decline in acreage. Improved cotton prices and greater experience in cultivation once more caused an expansion in 1954.

241 The experience of the past four years has served to point out the potentialities and limitations of cotton cultivation in Syria. During the 1950-51 boom, cotton cultivation spread to most parts of the country, but subsequent events have shown that it is unsuited to many of them. In the Hauran, inadequate moisture has caused farmers to revert to wheat, barley and leguminous crops; in the Latakia region, soil and climate have also proved unfavourable. In the Damascus region, cotton cultivation has been practically discontinued. In the Aleppo region, as a result of the excessive costs of pump irrigation, cultivation is mainly confined to rain-grown cotton. 4/ In many parts of El Jezira, rice has replaced cotton owing to the shortage of labour. At present, cotton is localized chiefly in the Hama and Salamiye districts in central Syria, in the Hasetche district in El Jezira and in the province of Aleppo. About two-thirds of the total area is irrigated. Yields are about twice as high on irrigated as on rain-fed land, and the Syrian average, having almost doubled since the pre-war period, is one of the highest in the world. 5/

1/ Ministry of Finance, Budget Note, 1955 (Damascus, 1955).

2/ Figures obtained from Ministry of National Economy.

3/ Large-scale cultivation of cotton began in 1924, increased rapidly until 1931 and after a sharp fall during the depression reached its pre-war peak of 40,000 hectares in 1936. In this period, American type cotton replaced native varieties. During the Second World War, acreage once more declined, owing to the shift to grains.

4/ Bureau des documentations syriennes et Arabes, Etude spéciale sur le coton syrien (Damascus, 25 November 1952, mimeographed).

5/ Yields per hectare rose from 221 kilogrammes in 1951 to 345 in 1952, 363 in 1953 and 389 in 1954.